

34228
S/115/62/000/004/005/007
E194/E154

9.6000 (1089,1331)

AUTHOR:

Kurtev, N.D.

TITLE:

Errors of a logarithmic amplitude-time transducer
in a device for measuring the logarithm of a ratio

PERIODICAL: Izmeritel'naya tekhnika, no.4, 1962, 33-36

TEXT: Devices to measure the logarithm of the ratio between two magnitudes using a logarithmic amplitude-time transducer are employed in colour pyrometers and other instruments. Analysis of the conversion process is required to increase the accuracy and speed of measurements and to simplify the equipment. The logarithmic amplitude-time transducer comprises a pulse generator which produces exponential pulses and an amplitude comparator, whose output consists of pulses of constant amplitude. The duration of these pulses is proportional to the logarithm of the amplitude height of the input signals. The accuracy of conversion is analysed and methods of reducing the error are considered. One method consists in constant displacement of the zero level of the impulses applied to the

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Errors of a logarithmic ...

S/115/62/000/004/005/007
E194/E154

1.6 seconds with the second, though both these values are better than are obtained with the more usual instruments. The experiments demonstrated the possibility of constructing simplified high speed systems based on logarithmic amplitude-time transducers.

There are 3 figures and 4 tables.

+

Card 3/3

KURTEV, N.D., kand. tekhn. nauk

Interference rejection of logarithmic pulse systems with
logarithmic amplitude-time converters. Trudy VZEI no.26:101-
106 '64.

Signal-to-noise ratio in a pulse amplifier. Ibid.:107-112

(MIRA 18:6)

L 64473-65 ENT(1)/EWA(h)

ACCESSION NR: AR5006540

S/0274/64/000/012/AG14/AG14
621.391.82:621.375

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz'. Sv. t., Abs. 12A72

AUTHOR: Kurtev, N. D.

TITLE: Signal-to-noise ratio in a pulsed amplifier 25

CITED SOURCE: Tr. Vses. zaochn. energ. in-ta, vyp. 26, 1964, 107-112

TOPIC TAGS: pulsed amplifier, signal to noise ratio

TRANSLATION: A formula has been developed which ties the principal parameters of a pulsed amplifier with the signal-to-noise ratio (SNR) at its output, allowing for the frequency-dependent component of the energy spectrum of the input fluctuation process. The problem solution is applicable to radiation-measuring systems with a photoelectric-sensor input. It is assumed that the amplifier frequency characteristic lies in a low frequency band and is determined by the time constants of these three circuits: input (τ_1), equivalent integrating (τ_2), and differentiating circuit (τ_3) which are regarded as quadripoles connected in series. This formula is derived for SNR:

$$\frac{\sigma}{n} = \frac{\Phi_1}{\sqrt{b}}$$

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L 64473-65

ACCESSION NR: AR5006540

where

$$\tau_1 = \frac{1}{\gamma} \sqrt{\frac{\gamma-1}{a_1 \gamma} + \ln \gamma} \quad \gamma = \frac{\tau_2}{\tau_1}; \quad a_1 = \frac{1}{\tau_1^2}$$

a^1 , b are constants depending on the circuit parameters. SNR is the maximum for an optimum value γ dependent on τ_2 . With τ_2 increasing, the maximum shifts toward the equality of the time constants and becomes higher and blunter. In the extreme case, the curve coincides with the very-low-frequency characteristic. The latter is independent of the absolute values of the time constants; it depends only on their ratio. The SNR value has been corroborated experimentally for $b/a^1 = 300$. Two illustrations. Bibliography: 7 titles.

SUB CODE: EC

ENCL: 00

Card 2/2

3(8)

SOV/9-59-2-14/16

AUTHOR: Kurtev, P.I. (Bulgaria)

TITLE: Physic ~~Research~~ of Productive Carbonate Deposits of North-East Bulgaria (Fizicheskiye svoystva produktivnykh karbonatnykh otlozheniy severo-vostochnoy Bolgarii)

PERIODICAL: Geologiya nefti i gaza, 1959, Nr 2, pp 64-66 (USSR)

ABSTRACT: Information is given on results of laboratory experiments investigating the interdependence of physical and collecting properties of cavernous fissured limestone and dolomites of the Valanginian stage, in North-East Bulgaria. The experiments were carried out in order to obtain precise data on the possibility to use electric methods in well exploration. Cylindrical and cubic specimens were subjected to tests and various parameters of characteristics for dolomites, limestone and dolomitized limestone were determined. It was stated that: oil saturation of intergranular pores in limestone and dolomitized limestone did not depend on porosity; oil saturation of dolomites increased with higher porosity; A tendency to direct dependence between porosity and permeability was observed in dolomites; it did not exist in dolomitized limestone. The dependence of relative electric re-

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SOV/9-59-2-1

Physical Properties of Productive Carbonate Deposits of North-East Bulgaria

... on porosity was similar in both materials and can be practically used. The relation between diffusion-adsorption and porosity has no practical importance. The effect of caverns on the interrelation of electric resistance and porosity was investigated with the use of the Maxwell formula and a series of curves. The curves showed that electric resistance of cavernous rocks was higher than that of rocks with intergranular pores; the resistance increased with higher cavernosity and lower intergranular porosity. Relations of rock resistances in oil- and water-saturated conditions depended only on cavernosity. However, due to limited accuracy in determining this parameter, the possibility of cavernosity and oil content determination by electric methods only is considerably reduced.

There are 4 graphs and 8 references, 7 of which are Soviet and 1 English.

Card 2/2

KURTEV, S.

"How we account for the working days"

Otchetnost I Kontrol V Selskoto Stopanstvo. Sofia, Bulgaria. Vol. 3, no. 8, 1958

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 6, Jun 59, Unclass

KURTEV, St.

Treatment of contractures and ankylosis of the lower extremity
in osteoarticular tuberculosis. Ortop.travm. i protez. 20
no.3:67-68 Mr '59. (MIRA 12:6)

1. Iz bolgarskoy meditsinskoy brigady (glavnyy vrach - D.
Marinov) v Koreyskoy Narodno-Demokraticheskoy Respublike i
khirurgicheskogo oddeleniya (zav. - Chan Bo So) oblastnoy
bol'nitsy g. Sinydzu.

(TUBERCULOSIS, OSTEOARTICULAR, compl.

contracture & ankylosis of leg, ther. (Rus))

Bulgaria/Military

B-573

KURTEV, Stefan, Podpolkovnik, Med Ser; author of an article entitled "Intrajoint Application of Thrombocyte Preparations in the Presence of Hemarthrosis and Traumatic Hydrops." (Voenna Meditsinsko Delo, Sofia, Mar 61, pp 48-51)

24
(1)

KURTEV, T. I. Cand Geol-Min Sci -- (diss) "The physical properties of ^{productive} ~~mineral~~ deposits in Northeastern Bulgaria and selection of the complex of geophysical methods for the exploration of ^{bore cuts.} ~~the productive~~ Mos, 1957. 14 pp 20cm.
(Min of Higher Education USSR. Mos Order of Labor Red Banner Petroleum Inst
im I. M. Gubkin. Chair of Mine^{inf} Geophysics), 120 copies
(KL,8-57, 108)

10

KURTEV, T.I.; NIKOLOVA, I.B.

- For the interpretation of the results of electrometric investigations
- in highly argillaceous sandstone pits. Godishnik fiz mat 57:135-140 '62/'63 [publ. '64].

KURTEV, T.I.

Accuracy and optimum conditions in the determination of electric conductivity of the stratal water after the method of spontaneous polarization. Godishnik fiz mat 55 no.2:37-49 '60/'61 [publ. '62].

1 33093-66 RO
ACC NR: AP6024607

SOURCE CODE: BU/0017/65/020/006/0005/0007

AUTHOR: Chak'rov, Kh. (Lt. colonel of the medical service); Kurtev, V. (Lt. colonel of the medical service) 29
13

ORG: none

TITLE: Raising to a higher level the military sanitary preparation in the Bulgarian People's Army

SOURCE: Voenno-meditsinsko delo, v. 20, no. 6, 1965, 5-7

TOPIC TAGS: sanitation, military medicine, CW agent

ABSTRACT: Organizational measures aimed at improvement of the medical and sanitary services are discussed. The necessity of being prepared to treat shock and conditions arising as a result of contamination of wounds with chemical warfare agents or of exposure of the whole organism to such agents is pointed out. [JPRS: 34,903]

SUB CODE: 06, 15 / SUBM DATE: none

Card 1/1 BK

0915

2241

BULGARIA

KURTEV, V., Lieutenant Colonel (Podpolkovnik), Medical Corps
(Meditsinskata Sluzhba).

"Vasil D. KOLLOV, a Pioneer of Military Field Therapy in Bulgaria."

Sofia, Voenno Meditsinsko Dolo, Vol 18, No 5, October 1963, pp 63-64.

Abstract: The subject of the article was born in 1875, studied medicine in various scientific centers in Europe, and participated in the Balkan wars of 1912-1913. He was particularly interested in yellow jaundice, of which many fighting soldiers were cured by him but which nevertheless resulted in a temporary loss of battle capacity.

References to four of the subject's publications, none of which is dated later than 1914.

1/1

- END -

2463

CSO: 2000-N

RUSEV, B., inzh.; KURTEV, V., inzh.

Combined leveling of triangulation and precise polygonometry
by indirect and conditional methods. Godisznik Inzh stroit
inst 14 no.1:229-238 '62. [publ.'63]

S/035/62/000/006/061/064
A001/A101

AUTHOR: Kurtev, Veliko

TITLE: Graphical adjustment of a combined intersection

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 6, 1962, 35,
abstract 6G218 ("Godishnik Inzh-stroit. in-t. Fak. stroit.,
arkhitekt. i khidrotekhn", 1961, v. 13, no. 1, 13 - 16, Bulgarian;
German summary)

TEXT: The author considers a method of constructing the error figure and subsequent calculation of coordinates of the point being determined according to Gel'mert (no source is indicated). Actually, the adjustment method is a graphical-analytical one. Let the sides of the figure of errors (in the case considered by the author - a triangle) be b_i , distances of the point being sought for to these sides be d_i , lengths of directions - s_i . Then the position of the point is determined from the conditional extremum: ✓

$$\frac{1}{s_1^2} d_1^2 + \frac{1}{s_2^2} d_2^2 + \frac{1}{s_3^2} d_3^2 = \min,$$

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S/035/62/000/006/061/064
A001/A101

Graphical adjustment of a combined intersection

and simultaneously $b_1d_1 + b_2d_2 + b_3d_3 = 2F$ (double area of the figure).

O. Sheynin

[Abstracter's note: Complete translation]

Card 2/2

SEREBRYAKOVA, L.V.; KURTEVA, A.K.

Fungous diseases of children and their treatment. Vest.derm. i ven.
31 no.2:48 Mr-Apr '57. (MIRA 12:12)

1. Iz Omskogo mikologicheskogo statsionara.
(DERMATOMYCOSIS) (CHILDREN--DISEASES)

KURTEVA, A-N.

CA

118

Determination of sulfanilamide compounds by titration with hydrosulfide. A. N. Kurteva and A. K. Ruzhentseva. *Zhur. Anal. Khim.* 2, 285 (3) (1917). A no. of sulfanilamide compds. were successfully titrated with 0.1 N NaOH, the success of the detn. being the proper choice of indicator and solvent. The 14 compds. studied are arranged in order of their decreasing dissociation const. (K_a) (cf. Hill and Roblin, *C. A.* 37, 1515⁹), in which order the compds. display certain characteristics. Sulfanilic acid and *N*-acetyl-sulfanilamide, K_a 1.2×10^{-3} and 4.2×10^{-3} , resp., were readily titrated in aq. as well as in org. (alc., Me_2CO , and 1:1 Me_2CO) media. Phenolphthalein and thymolphthalein were suitable as indicators. Sulfadiazine, K_a 3.3×10^{-7} , was detd. by dissolving it in excess alkali and titrating back the excess. The other compds. could not be titrated directly in org. solns. Those having K_a of the order of magnitude of 10^{-7} to 10^{-9} (6-sulfanilamidoquinoline K_a 1.0×10^{-7} , sulfathiazole K_a 7.6×10^{-8} , sulfamethazine K_a 4.3×10^{-8} , sulfazale K_a 1.0×10^{-8} , and *N*-sulfanilylsulfanilamide K_a 1.4×10^{-8}) could be titrated in 1:1 Me_2CO and in alc. with thymolphthalein as indicator. Compds. with K_a of the order of magnitude of 10^{-9} (sulfidine K_a 3.7×10^{-9} and 6-sulfanilylpicolinic acid K_a 2.1×10^{-9}) could be titrated in dry Me_2CO with thymolphthalein as indicator. Compds. having K_a below 10^{-9} (Na sulfandylthranilate K_a 5.0×10^{-11} , sulfanilamide K_a 3.7×10^{-11} , and sulfanilylguanidine K_a 2.0×10^{-11}) could not be titrated with indicators. M. Hosh

AS 50-51A METALLURGICAL LITERATURE CLASSIFICATION

145080 91

1917-1918

1917-1918

1917-1918

1917-1918

KURTEVA, A. N.		17	
CA			
<p>Quantitative determination of sulfur in sulfanilamide compounds. A. N. Kurteva and A. K. Ruzhentseva. <i>Zhur. Anal. Khim.</i> 3, 377-80 (1948); cf. C.A. 43, 8422f.</p> <p>—The method involves bromination of the sulfanilamide, thereby liberating S; the latter combines as H_2SO_4 and is detd. as $BaSO_4$. Dissolve 0.15-0.18 g. of the compd. in 10 ml. of 10% HCl within a 250-ml. Erlenmeyer. Add 10 ml. of H_2O, 1-2 ml. of Br, cover the flask with a funnel, and bring carefully to a boil, occasionally stirring. Continue boiling to disappearance of Br vapors, add a few crystals of phenol to remove remnants of Br, rinse the funnel and the flask walls, and filter. Triturate the residue with a glass rod and wash (soften in hot H_2O if need be). Combine wash water and filtrate, neutralize excess HCl as usual, and ppt. SO_4 with $BaCl_2$. Na albacid is dissolved in 15 ml. of H_2O and then treated with Br. White streptocid is dissolved in 15 ml. of 0.1 N NaOH. Sulcinid is dissolved either in 100 ml. of H_2O or in 100 ml. H_2O and 2 ml. of 10% HCl. Sulfantrol is dissolved by boiling for 1.5 hrs. in 20 ml. of 2:1 HCl.</p> <p>M. Howh</p>			
<p>Analyt. Lab., All-Union Sci. Res. Chem.-Pharm. Inst. in. Orlonokidze, Moscow</p>			
<p>ASB-52 METALLURGICAL LITERATURE CLASSIFICATION</p>			

KURTEVA, O.I.; BRUTSKUS, Ye.B.

Solubility of calcium sulfate in a mixture of acids $H_3PO_4 + H_2SO_4$
and $H_3PO_4 + H_2SiF_6$. Zhur.prikl.khim. 34 no.8:1714-1722 Ag
'61. (MIRA 14:8)

(Calcium sulfate)
(Solubility)

KOLEV, N.; KURTEVA, R.

Radial chromatography of sulfuric dyes. Khim i industriia 34 no.3:89--
91 '62.

DIANKOVA, N.; KURTEVA, R.; POPOVA, N.

Reactive dyes. Khim i industriia 34 no. 1: 25-29 '64.

KOLEV, N.; KURTEVA, R.; DIANKOVA, H.

A method for the granulation of organic pigments. Godishnik Inst
khim prom 2:83-89 '63.

POPOVA, Nadezhda, inzh.; DIANKOVA, Nadezhda, inzh. ACHITKA, N. sika, inzh.

New achievements in the field of dyes. Tekstilna prom 14 no. 1:
33-38 '65.

1. NIKHIP, Sofia.

KURTEYEV, V. (g.kirov)

Portable bullet trap. Voen. znan. 31 [1.e.32] no.5#18 My '56.
(MLRA 919)

1.Obshchestvennyy instruktor strelkovo-sportivnogo kluba Dobro-
vol'nogo obshchestva sodeystviya armii, aviatsii i flotu.
(Rifle ranges)

KURTEYEV, V. V.

IC

26714

PA 26714

USSR/Engineering
Blasting
Mines and Mining

Oct 1947

"Introduction of Blasting at the Tyry-Auz Quarry,"
V. V. Kurteyev, E. K. Il'inskiy, Mining Engng, 2 pp
"Gornyy Zhurnal" No 10

This quarry is located some 2,965 - 3,010 meters
above sea level, and works the upper layers of a
sharn block. The quarry used to be worked by the
step method, every step or stage being 3 meters in
height. This method had several defects, the
greatest of which was the necessity of using excess

IC

26714

USSR/Engineering (Contd)

Oct 1947

manpower. Even this new method has defects, however
the chief one being that it results in creating
rock pieces of large dimension.

KURTEYEV, V. V.

PA 15/19T102

USSR/Mines
Mining Methods
Mining Equipment

Sep 48

"Main Ore Chute of the Tyrny-Auz Mine," V. V.
Kurteyev, Mining Engr, 1 $\frac{1}{2}$ pp

"Gor Zhur" No 9

Describes shafts for transporting ore in Tyrny-Auz
mine. Four sketches.

15/49T102

KURTOGL'DYEV, K., assistant

Morphology of the arteries of the forearm. Zdrav. Turk. 3 no.6:
25-27 N-D '59. (MIRA 13:5)

1. Iz kafedry normal'noy anatomii (zav. - prof. S.S. Danilov)
Turkenskogo gosudarstvennogo meditsinskogo instituta im. I.V.
Stalina.

(ARTERIES)

KURTGEL'DYEV, K., assistant

Morphology of the artery of the forearm. Zdrav. Turk. 4 no. 2:21-
22 Mr-Apr '60. (MIRA 13:10)

1. Iz kafedry normal'noy anatomii (zav. - prof. S.S. Danilov)
Turkmenskogo gosudarstvennogo meditsinskogo instituta im.
I.V.Stalina.

(ULNAR ARTERY)

KURTGEL'DYEV, K., assistant

Correlative relationships between the arteries and the skeleton of the forearm in fetuses and children during the first months of life. Zdrav. Turk. 5 no.5:19-20 S-0 '61. (MIRA 14:12)

1. Iz kafedry normal'noy anatomii (zav. prof. S.S.Danilov) Turkmen-skogo gosudarstvennogo meditsinskogo instituta imeni I.V.Stalina.
(ARM_BLOOD VESSELS) (FETUS)
(INFANTS (NEW-BORN))

KURTGEL'DYYEV, K.

New improved lines of cotton obtained by crossing forms with different types of branching. Izv. AN Turk. SSR. Ser. biol. nauk no.3:35-37 '63. (MIRA 17:1)

1. Turkmenskiy nauchno-issledovatel'skiy institut zemle-
deliya.

KURTH, Rudolf

Pulsing gas balls: answer to a crisis. Acta astronom 12 no.4:
261-266 1962.

KELEMEN, L., prof.; CSOGOR, I., dr.; SREMPER, Marta, dr.; KURTHY, Eva

Contribution to the study of capillary permeability in epidemic hepatitis. Med. intern. (Bucur) 17 no.6:683-686 Je'65.

1. Lucrare efectuata in Clinica de boli infectioase, Institutul medico-farmaceutic, Tirgu Mures (director: prof. L. Kelemen).

KURTHI, L. 1948

(Oti Kozponti Korhazanak, 11.Szamu Belo Ztalyarol.)

"Unusual Complication in theThiouracil Treatment of Grave's Disease."

Orvosok Lapja, Budapest, 1948, 2/31(988-989)
Abst: Exc. Med. 111, Vol. 111, No. 5, p. 178

KURTHY, LASZLO

FISCHER, Antal.; KURTHY, Laszlo.; ROHNY, Belane,

Examination of various esterases in hepatitis. *Magy. belorv. arch.*
10 no.1:24-29 Feb '57.

1. A budapesti Orvostudományi Egyetem III. sz. Belklinikájának
(igazgató: Gomori Pál dr. egyetemi tanár) és a budapesti Koz-
egészségügyi és Járványügyi Allomás (igazgató: Kapos Vilmos dr.)
Hepatitit Korhási Osztályának (főorvos: Kurthy Laszlo dr.) Közleménye.
(ESTERASES, in blood
in hepatitis (Hun))
(HEPATITIS, blood in
esterase activity (Hun))

SIMON, Miklos, Dr.; KURTHY, ~~Laszlo~~, Dr.; ELADI, Pal a biologiai tudomanyok
kandidatusa dr., SOOS, Sandor, Dr.; HORVATH, Bertalan, Dr.

Diagnostic significance of serum aldolase in liver diseases. Orv. hetil.
99 no.35:1201-1207 31 Aug 58.

1. A Magyar Nephadsereg Eggessegugyi Szolgalatanak, a Budapesti Kor-
egeszsegugyi-Jarvanyugyi Allomas (igazgato: Kapos Vilmos dr.) Hepatitis
Korhazanak (fo orvos: Kurthy Laszlo dr.) es a MTA Biokemiai Intezetének
(igazgato: Szorenyi Imre dr. akadémikus) kozlemenye.

(DESMOLASES, in blood

zymohexase in liver dis., diag. significance (Hun))

(LIVER DISEASES, blood in

zymohexase, diag. significance (Hun))

KURTHY, László, dr.; SIMON, Miklós, dr.; SOÓS, Sándor, dr.

Relation of serum aldolase activity to histological changes in the liver in acute hepatitis and other liver disorders. Orv.hetil. 101 no.31:1098-1102 31 J1 '60.

1. Fővárosi Pesthidegkuti Kórház, II. sz. hepatitis osztály,
Magyar Néphadsereg Egészségügyi Szolgálat és I. Kobányai-úti
Szakrendelőintézet
(ALDOLASE blood)
(LIVER DISEASES pathol)

KURTHY, L.

On the significance of stomach biopsy. Acta med. Hung. 18 no.3:
349-356 '62.

1. I. Hepatitis-Abteilung (Chefarzt: Dr. L. Kurthy) Des
Bezirkkrankenhauses Pesthidegkut, Budapest.
(GASTRITIS) (BIOPSY)

KURTHY, F.

"The Uniform List of Products and Prices", I. 27, (TÖRTÉNEI ELES, Vol. 8,
No. 8, July 1954, Budapest, Hungary)

SO: Monthly List of East European Accessions, (CEAL), IC, Vol. 4,
No. 1, Jan. 1955, Uncl.

KERTY, P.

"Calculation of Prime Cost", P. 31. (TOBETHEMES, Vol. 8, No. 8, July 1954,
Budapest, Hungary)

SO: Monthly List of East European Accessions, (FEAL), IC, Vol. 4,
No. 1, Jan. 1955, Uncl.

RUMANIA/Pharmacology - Toxicology - Tranquilizers.

V

Abs Jour : Ref Zhur Biol., No 4, 1959, 18553

Author : Mulfay, V., Kurthy, S., Nagy, O.

Inst : -

Title : The Treatment of Esophagal Spasms with Chlorpromazine

Orig Pub : Viata med., 1958, 5, No 7, 649-653

Abstract : No abstract.

Card 1/1

- 19 -

KURTI, Gyorgy

The Budapest exhibition of Polish scientific publications.
Magy tud 69 no.2:106-107 F '62.

1. Csoportvezeto, Akademiai Kiado, Budapest.

KURTI, Gusztav

Technologic questions relating to the manufacture and repair in
the motor vehicle repair industry. Pt. 1. Gepyartastechn 1 no.7:
248-252 0 '61.

1. Capital Electric Railways, Budapest.

KURTI, Gusztav

Technological problems in the manufacture and repair in
the vehicle repair industry. Pt.2. Gepgyartastechn 2 no.1:
13-18 Ja '62.

1. Fovarosi Villamosvasut.

KURTI, Gusztav

Technical development, small-scale mechanization in the
vehicle repair industry. Gepgyartastechn 2 no.7:252-255
J1 '62.

1. Fovarosi Villamosvasut.

KURTI, Istvanne

"Educational psychology" by Tomas Pardel. Reviewed by Mrs.
Istvan Kurti. Magy pszichol szemle 20 no.2:305-306 '63.

KURTI, Istvanne

Problems of educational psychology in Czechoslovakia. Magyar pszichol szemle 20 no.4:590-596 '63.

KURTI, L.

"A new successful radio play," "The Kallai Kettes." p. 4.

"The periodical Unser Rundfunk, organ of the Radio Committee of the German Democratic Republic; a criticism." p. 6

"-senyi. Marginal notes on the radio listener." p. 8

"Peter Veres' Laci; an announcement of a radio play." p. 8
(Magyar Radio, Vol. 9, No. 42, October, 1953, Budapest)

SO: Monthly List of East European Vol. 3, No. 3 1954
Library of Congress, March 1954, Uncl.

POLAND/Atonic and Molecular Physics - Low Temperature Physics

D-5

Abs Jour : Ref Zhur - Fizika, No 12, 1958, No 27312

Author : Kurti N., Robinson F.N.H., Simon F., Spohr D.A.

Inst : Not Given

Title : Magnetic Method of Obtaining Lowest Temperatures.

Orig Pub : Nukleonika, 1957, 2, No 1, 147-155

Abstract : Translation of an article, containing a description of an experiment on nuclear adiabatic demagnetization (Referat Zhur Fizika, 1957, No 3, 6365).

Card : 1/1

AUTHOR: KURTI, N., ROBINSON, F.N., SIMON, F., SPOR, D.A. PA - 2171
 TITLE: Nuclear Cooling (Yadernoye okhlazhdeniye, Russian)
 PERIODICAL: Uspekhi Fiz.Nauk, 1957, Vol 61, Nr 1, pp 45-51 (U.S.S.R.)
 Received: 3 / 1957 Reviewed: 4 / 1957

ABSTRACT: This paper was published in the original in Nature, 178,450 (1956) and was translated by P.A.CHENCOV into Russian. Shortly after the first successful experiments concerning magnetic cooling it was suggested that a system of deeper temperatures be attained by the demagnetization of a system of nuclear spins, i.e. systems in which nuclear spins settle. The problem of realizability was investigated rather accurately by F.E.SIMON, Le Magnetism, 3, 1, Strasbourg, 1940. In accordance, magnetic field strengths of the order of 50.000 Ørsted and temperatures of the order 0,01° K are necessary for a perceptible reduction of the entropy of the nuclear system. The first part of all experiments concerning nuclear cooling has to consist of a magnetization, i.e. of the polarization of nuclear spin. For the orientation of nuclei atomic and molecular fields can be used, for which quite a series of methods was suggested. J. HATTON and B.V.ROLLIN, Proc.Roy.Soc.A 199, 222 (1949) began with the second stage of these experiments; they demagnetized a calcium fluoride crystal with an initial field strength (at 1,2° K) of up to 500 Ørsted. In this way they obtained 0,17° K. The authors of this paper believe to have approached more closely to their final aim. This aim consists in a perceptible reduction

Card 1/2

PA - 2171

Nuclear Cooling.

of the entropy of the system of nuclear spins under the action of an exterior magnetic field. By measuring the temperature obtained on the occasion of demagnetization, data concerning the nuclear interactions in solids could be obtained. Nuclear cooling occurs as follows: A substance with nuclear paramagnetism is magnetized in a strong magnetic field, on which occasion the liberated magnetization heat is absorbed by a "heat absorber". Magnetic field-strength is then reduced to zero, and if this process develops adiabatically, the system of nuclear spins cools down to a temperature which depends on the initial temperature, the strength of the applied magnetic field, and on nuclear interactions. The conditions for the utility of heat absorbers are discussed. The construction of the device is discussed and an illustration of the sample and the holder is attached. The carrying out of nuclear cooling is described. According to the results (demonstrated in a diagram) obtained, temperature differences of about $20 \cdot 10^{-6} \text{ }^{\circ} \text{K}$ can be obtained. (2 illustrations).

ASSOCIATION: Not given

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress

Card 2/2

KURTI, N.

Cooling by adiabatic demagnetization of nuclear spins. Usp. fiz.
nauk 75 no.1:151-168 S '61. (MIRA 14:9)
(Low temperature research)

KURT, Oskar, Ing.

Granulite. Constr Bac 16 no.766:2 12 September 1964.

KURTI, Oscar, ing., correspondent

The main objective of socialist competition, the quality of products. Constr Buc 17 no.783:2 9 Ja '65.

KURTI, S.

DAVID, TIVADAR, MECS, J.; MAJOR, S.; KURTI, S.

The significance of segmental resection of the lungs. Magyar sebeszet
6 no.3:173-180 Aug 1953. (CIML 25:5)

1. Doctors. 2. Surgical Department of Szolnoki County Institute of
Pulmonary Diseases (Head Physician -- Dr. Tivadar David).

PERENYI, Gyorgy, dr.: KURTI, Sandor, dr.

Monaldi's drainage in the treatment of pulmonary abscesses.
Tuberkulózis 13 no.8:243-244 Ag '60.

1. A szolnoki megyei Tudorbeteggyógyintézet (igazgató-őorvos:
Perenyi Gyorgy dr.) közleménye.
(LONG ABSCESS ther.)
(DRAINAGE)

KURTI V. Príspevek k otázce oleolysy mycobacteria tuberkulosis, Oleolysis of Mycobacterium tuberculosis, Rozhledy v Tuberkulose, Prague 1949, 9/2-3 (144-146)

The oleolytic influence of certain oils on cultures of *M. tuberculosis* was tested. The cultures were grown on potato-glycerine medium. Of the oils having a bactericidal action on the tubercle bacillus, eugenol, quayacol and anethol were tested. The first two did not cause oleolysis, most likely because of the concurrent denaturation of albumens. Anethol, which does not contain free phenolic hydroxyl groups, and does not cause denaturation, caused rapid and extensive oleolysis. Further tests with anethol derivatives are in progress.

Kvacek - Prague

So: Medical Microbiology and Hygiene, Section IV, Vol 3, No 1-6

KURTI, V.

Metabolism of typtophan and indole in pulmonary tuberculosis. Biol.
listy 31 no.1:21-23 27 May 50. (CML 19:4)

1. Of the Lung Department of the State District Hospital in Prague
VIII, Bulovka, and of the Institute of Clinical Physiology (Head—
Prof. Josef Skladal, M.D.)

4. 1. 4.

3

The solution of ascorbic acid to p-aminosalicylic acid (PAS). V. Kottl and J. Hejny. *Ceskoslov. Lékař. Časopis* 68: 231-232 (1963). Vitamin C does not interfere with the action of PAS even if given in large doses. Bacteriostatic effects with PAS in combination with vitamin C did not show a decrease of the bacteriostatic action of PAS. The addition of vitamin C seems to stabilize PAS. Otto R. Lehtinen.

① M. J. J.

EXCERPTA MEDICA Sec.15 Vol.10/5 Chest Diseases May57

1403. KÜRTI V. and HEJNÝ J. *K problematike nezrážanlivosti-p-aminosalicylovej kyseliny pri liečbe tbc. The problem of PAS intolerance during tb therapy ROZH. TUBERK. 1956, 16/7 (361-364) Illus. 2
The addition of L-ascorbic acid and at times glucose to the infusion is recommended to eliminate side-effects. Intolerance to oral treatment was mitigated by individual substitutional therapy with digestive enzymes, vitamin C and glucose; the latter is recommended on clinical and laboratory evidence.

Blumberg - Jevičko

EXTRACTA MEDICA Sec 9 Vol 13/8 Surgery August 50
 4683. EFFECT OF AZULENES ON MYC. TUBERCULOSIS AND THEIR USE IN
 LOCAL TREATMENT OF TUBERCULOUS CYSTITIS - Účinek azulenů na
 mycobacteria a jejich použití při lokální léčbě specifických cystitid - Kottl V.
 and Udrlich J. Výzkumný Ústav Tuberk., Praha - ČAS. LÉK. ČES. 1958,
 97/3 (67-71)

The bacteriostatic effects of chamazulene and guaiazulene on virulent and avirulent strains of Myc. tuberculosis, and on variants resistant to streptomycin, isoniazid and PAS have been shown. The azulenes were used in liquid albumin media in concentrations of 20 µg./ml., with inoculations of 0.02 mg./ml. of medium. The azulenes were dissolved in ethyl alcohol before inoculation into the media, so that the final concentration of the initial solvent in the medium did not exceed 1%. In confirmation of the work of other authors, this bacteriostatic effect cannot be demonstrated in solid media. In view of the bacteriostatic effect of azulenes of Myc. tuberculosis and their anti-inflammatory properties, stimulatory effect on the RES, positive influence on regeneration and epithelialization, and very low toxicity, guaiazulene was used in the local treatment of tuberculous ulcerative cystitis. Daily, or every other day, 16 patients received an instillation of 10-20 ml. of guaiazulene in rape oil in a ratio of 1:1,000. After 15-20 washouts it was possible to demonstrate cystoscopically healing of the superficial ulcers of the bladder, which had not been effected at all by previous anti-tb treatment. In patients with contracted bladders with torpid ulcers, pain decreased, urinary frequency decreased and haematuria disappeared. Before using this type of treatment it is necessary to deal with secondary infection in order to remove the purulent surface on the mucous membrane defects. Instillation of guaiazulene is tolerated better than washouts with streptomycin or thiacetazone suspensions.

(IX, 4, 15)

SACERPTA MEDICA Sec 15 Vol 13/2 Chest 313. Feb 50

508. STUDY ON THE EFFECT OF GLUTAMIC ACID ON NEURO-TOXIC MANIFESTATIONS ACCOMPANYING ISONIAZID THERAPY - Studium účinku glutamové kyseliny na neurotoxické projevy při léčbě INH. - Kůrta V. and Novák O. Výzkumný Úst. Tb., Praha - ROZHL. TUBERK. 1959, 10, 5 (389-396)

The neurotoxic effect of isoniazid increases with higher doses as follows: in doses of up to 5 mg./kg. 1-2% of the patients showed neuro-toxic manifestations, in doses of 10 mg./kg. 6-10% of the subjects showed these manifestations within 6-8 weeks, in doses of 20-25 mg./kg. 40% of the patients were affected within 2-4 weeks etc. The cause could be a production of ammonia from the hydrazin in the metabolic process. In a detailed article the favourable influence of simultaneous administration of glutamic acid in 42 patients with marked neurotoxic symptoms during isoniazid therapy is described. The patients received a dose of 10 mg. isoniazid per kg. body weight; each tablet contained 50 mg. isoniazid and 200 mg. glutamic acid (1:4). The patients were in the age range of 23-74 yr. Disturbances of the CNS were most frequently observed in 1/3 of the patients of less than 50 yr. of age. Disturbances of the peripheral nerves were observed in 1/3 of the patients over 50 and were of the polyneuritis type. A discussion is given on the basic disease, the complications and the mechanism of the isoniazid metabolism. Special care was devoted to the patients with disorders of the peripheral nervous system, until the symptoms disappeared. Generally the patients received this treatment for 1.2 - 1 year. In some case reports the course of the treatment is described. The method was also tried in meningitides. Here 5-8 mg./kg. isoniazid was given, with an increased addition of glutamic acid, B complex and pyridoxin, each 6 tablets daily, and 3 x 2 g. daily of brewers' yeast. INH therapy should be administered with care, especially in women in the preclimacteric and climacteric stage, since they are then very neuro-labile. The combination tablets were well tolerated. This is in accordance with the experience of Italian authors, who found that excellent results are obtained in disturbances of the CNS, while peripheral disorders can only be treated with success in an early stage. These respond more favourably to pyridoxin and B complex as well as brewers' yeast. Ample literature is given.

Schaich - Lusenheim

KURTI, V.

Life and activities of academician Nikolai Fedorovich GAMALEIA.
100th anniversary of his birth and loth anniversary of his death,
2/5/1859 -- 3/29/1949. Cas.lek.cesk 99 no.29:1082-1085 19 Ag'60.

(BIOGRAPHIES)

~~SECRET~~
SECRET; HAVIA HAVIA

5

Country: Czechoslovakia

Academic Degrees:

Affiliation: Tuberculosis Research Institute (Výzkumný ústav tuberkulózy), Prague. Di-
rector: Docent Dr. R. [Radclif] KREJČÍK.

Source: Prague, Ročník v Tuberkulóze a v Nemocích Plicních, No 4, Apr 61, pp 276-280

Data: "Serum Levels of Hyaluronic Acid in Tuberculous Patients"

Co-authors:

ŠTULÍKOVÁ, V. Tuberculosis Research Institute, Prague

NOVÁK, O. " " " "

KURTI, V.

~~KURTI, V. (KURTI, V.)~~ UL'DRIKH, I. [Uldrich, I.]

Local treatment of specific ulcerous sycitis with guaiazulene.
Urologiia 28 no.2:51-52 Mr-Apr'63. (MIRA 16:6)

1. Iz Nauchno-issledovatel'skogo instituta tuberkuleza v Prage
(dir. - dotsent R.Krzhivinka).
(BLADDER—ULCERS) (GUAIAZULENE)

KURTI, V.

Lyszyme and its therapeutic use in pollution. Czech. pediat.
20 no.7:640-643 J1 '65.

CZECHOSLOVAKIA

UDC 612.015.3(577.153.9).014.469

KURTI, V.; NOVAK, O.; STUTLIKOVA, V.; Research Institute of Tuberculosis (Vyzkumny Ustav Tuberkulozy), Prague, Director (Reditel) Docent Dr R. KRIVINKA.

"Effect of Ethionamide on the Activity of Cholinesterase and of Acetylcholinesterase."

Prague, Casopis Lekaru Ceskych, Vol 105, No 52, 23 Dec 66, pp 1409 - 1411

Abstract [Authors' English summary modified]: Ethionamide and preparation 1321Th have a constant and significant inhibitory effect on cholinesterase and acetylcholinesterase serum activity of human red cells in vitro in concentrations of $5 \cdot 10^{-3}$ M. At lower concentrations only some effect was noticed. Other antituberculosis drugs do not show a similar effect. Some side-effects caused by ethionamide are explained by the cholinesterase activity inhibition. 1 Table, 6 Western, 2 Russian references. (Manuscript received May 66).

1/1

CHURKOV, V. M., BERNALOV, I. G. and SIROTNIKA, L. F.

*The use of blood substitutes (Russian text) KLIN. MED. (Mosk.) 1952, 30 (78-81) Tables 2
Numerous cases are reported and it is concluded that intravenous injections of solutions
containing glutamic acid, ethyl alcohol and monosaccharide, besides improving the general
condition of the patient, also increase the haemoglobin level and the erythrocyte count
and normalize the production of leucocytes and leucocyte count. A restoration of function
was also observed with regard to the bone marrow, with the appearance of immature
erythrocytes in the blood. In view of these favorable results a more widespread use of
this substitute, which was found to be highly effective not only in haemorrhagic conditions,
but also in cases of severe toxemia, is regarded as advisable.

Parenti - Ferrara (IX,4,6)

SO: EXCERPTA MEDICA, Sec. IV, Vol. 7 No. 10

KURPIN, V.Ya.

Production and distribution of individual loaves of bread in
Moscow. Khleb. i kond. prom. 1 no.1:37-39 '57. (MLRA 10:4)

1. Moskovskiy gorodskoy trest Rosglavkhleba.
(Moscow--Bread)

GINZBURG, Arkadiy Grigor'yevich, dotsent; ZAGLODINA, F.I., spotsred.;
KURTINA, L.P., vedushchiy red.

[Controlling alcohol fermentation in the baking industry by means
of the AG-1 apparatus] Kontrol' spirtovogo brozhenia priborom
AG-1 v khlebopekarnoi promyshlennosti. Moskva, Gos.nauchno-issl.
in-t nauchn. i tekhn.informatsii, 1959. 30 p. (MIRA 13:5)
(Fermentation) (Bakers and bakeries)

KURTINOV, A.V., inzh.

Some remarks concerning Technical Specifications for Railroad
Construction on Permafrost. Transp.stroi. 10 no.1:52-54
Ja '60. (MIRA 13:6)
(Railroad engineering) (Frozen ground)

KARMAZIN, V.I., doktor tekhn.nauk; KHIMSONETS, L.N., inzh.; KURTIY, V.V.,
inzh.; NIKOLAYENKO, V.P., inzh.

Industrial testing of drum separators using the overflow of classifiers.
Gor.zhur. no.6:70-73 Je '60. (MIRA 14:2)

1. Moldanobchermet, Krivoy Rog.
(Separators)

KURTIYEVA, L.

Novaya Nematoda Iz Kishchinka Ptits Turkestanskoy SSR - Strongyloides
Turkmenica Nov. Sp., "Works on Helminthology" on the 75th Birthday of
K. I. Skryabin, Izdak, Akad. Nauk, SSSR, Moskva, 1953, p. 347
All-Union Inst. Helminthology im K. I. Skryabin and Zoologo-Zootekhnical
Institute, acad. Sci., Turkmen SSSR

Dissertation: "Development of the Peripheral End of the Indicator Analyzer of a Force."
Candidate Sci., Ashkhabad Medical Inst. named I. V. Stalin, 15 May 54.
Kurmanskaya Istra, Ashkhabad, 5 May 54.

DO: 15. 204, 26 Nov 1954

BALCIKONYTE, S.; GLINSKIENE, V.; KRASAUSKAS, V.; KURTINYTE, G.;
STUKONIS, M.

Experience with combined preventive examinations for the
population. Sveik: apsaug. 8 no.5:38-43 '63.

1. Kupiskio rajono ligonine. Vyr. gyd. - G. Kurtinyte. LTSR
Onkologijos m. t. institutas. Direktorius - med. m. kand.
A. Telycenas.

(PREVENTIVE MEDICINE) (HEALTH SURVEYS)

SOV/120-58-6-19/32

AUTHORS: Brandt, A. A. and Kurtmulayev, R. Kh.

TITLE: A Study of Fast Ionisation Processes in the Gas Current behind a Shock Wave (Issledovaniye bystrykh ionizatsionnykh protsessov v gazovom potoke za udarnoy volnoy)

PERIODICAL: Priory i tekhnika eksperimenta, 1958, Nr 6, pp 94-97 (USSR)

ABSTRACT: In studying the propagation of shock waves in gases, one often has to measure ionisation processes whose duration is of the order of 100 to 300 μ s. In the usual methods (Ref.1) these processes are measured using probes. However, the use of probes involves serious difficulties. The method described in this paper involves measurements of the current of ionised gas, without upsetting the gasodynamic characteristics, by passing the gas along the axis of a cylindrical high frequency resonator. The resonator is illustrated in Fig.1. The method may be used to measure the coefficients of thermal ionisation of a gas in the current behind a shock wave propagated with a velocity of about 3 km/sec. The coefficient may be measured with an accuracy of about 10% at a number of points, uniformly distributed in space. The resonator vibrations of type E_{010} are excited by a klystron generator. If Card 1/4 the diameter of the resonator is greater than the diameter

SOV/120-58-6-19/32

A Study of Fast Ionisation Processes in the Gas Current behind a Shock Wave

of the gas channel, then the electric field is approximately uniform within the limits of the gas channel. The motion of a charged particle of mass m and charge e which is under the action of the field E of the resonator is described by:

$$m\ddot{z} = eE + F \quad (1)$$

where z is the distance along the axis of the resonator and F is the analogue of friction and is due to collisions between the charged particle and the gas molecules. If one assumes that the particle loses all its momentum on collision, we have:

$$F = -m\nu\dot{z} \quad (2)$$

where ν is the frequency of the collisions. On solving Eq.(1) when E varies sinusoidally, we find that:

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A Study of Fast Ionisation Processes in the Gas Current behind a Shock Wave

SOV/120-58-6-19/32

$$\left. \begin{aligned} \sigma_r &= \frac{ne^2}{m} \times \frac{\nu}{\omega^2 + \nu^2} \\ \sigma_i &= - \frac{ne^2}{m} \times \frac{\omega}{\omega^2 + \nu^2} \end{aligned} \right\} \quad (3)$$

which give the values of the real and the imaginary parts of the complex conductivity due to the motion of the charged particles. The concentration of charged particles n is then given by:

$$n = - \frac{m\omega}{e^2} \left(\sigma_i + \frac{\sigma_r^2}{\sigma_i} \right) \quad (4)$$

Since the mass of an ion is greater by three orders of magnitude than the mass of an electron, n may be looked upon as practically equal to the electron concentration. From the above equations it is clear that the ionisation of the gas leads to a change in the dielectric constant of the volume

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SOV/120-58-6-19/32

A Study of Fast Ionisation Processes in the Gas Current behind a Shock Wave

of the resonator, which is filled with the gas and also to the appearance of additional losses. The dependence of the real and imaginary parts of the conductivity on the resonator parameters is given by Eqs. (6) and (5) and when these are substituted in Eq.(4) the electron concentration n may be found. There are 3 figures and 2 references, of which 1 is Soviet and 1 is English.

ASSOCIATION: Fizicheskii fakul'tet MGU (Physics Department, Moscow State University,

SUBMITTED: June 3, 1957.

Card 4/4

KURTMULLAYEV, R.Kh. (Novosibirsk); NESTERIKHIN, Yu.Ye (Novosibirsk);
Ponomarenko, A.G. (Novosibirsk)

Raleigh - Taylor instability in a conical plasma accelerator.
PMTF no. 6:144-146 N-D '63.
(MIRA 17:7)

L 6525-65 ENT(1)/ENG(k)/EPA(sp)-2/EPA(w)-2/EDC(t)/T/EEC(b)-2/ENL(m)-2 Po-4/
 Pa-6/Pab-2h/Pi-4 LJP(c)/AFMDC/RAEH(c)/AEDC(a)/ASD(p)-3/BSO/AFETR/AFWL/SSO/ASD(a) 112
 AEDC(b)/ESD(s1)/ESD(t)/RAEH(t) 109
 ACCESSION NR: APh047369 5/0294/64/002/005/0661/0671

AUTHORS: Kurtmullayev, R. Kh; Nesterikhin, Yu. Ye.; Ponomarenko, A. G.

TITLE: Investigation of plasma jet structure created from a conical source.

SOURCE: Teplofizika vyssokikh temperatur, v. 2, no. 5, 1964, 661-671

TOPIC TAGS: magnetic field, plasma arc, plasma decay, electric conductivity,
 plasma jet, charged particle/ KGB condenser, IM 150/5 condenser, SVCh γ^b
sounding apparatus, SFH optical device, FEU optical device, monochromator,
 Langmuir probe, Rogovskiy loop

ABSTRACT: The structure of a plasma jet stream, generated from a conical source,
 was investigated in an attempt to determine the directed velocity, energy, and the
 mechanisms involved in the loss of charged particles. Two conical sources were
 used with 25° included angles, one with 5-cm and the other with 10-cm base diamet-
 ers. KGB capacitors were used with 32 μ f capacitance, 10-kv maximum discharge
 potential, and a discharge current of 3×10^5 amps. Two 2000-persted Helmholtz
 coils were placed around the jet, which in turn was confined in a glass tube 2 m
 in length. The measuring apparatus consisted of optical instruments, electro-

Card 1/3

L 6625-65

ACCESSION NR: AP4047369

2

magnetic counters (connected to double Langmuir probes, magnetic probes and Rogovskiy loops) and an SVCh-sounding apparatus. Charged particle concentration distributions, the conductivity, and effective collision frequencies were measured by means of a velocity interferometer with 3×10^{-8} sec time resolution. In the absence of magnetic fields, measurement results indicate a sharp velocity gradient in the arc-jet which is divided into four regions: a sharp front layer followed by a dark region, a bright spiraling principal region and, finally, the tail end. Analysis shows more than 90% of the plasma to be in the principal region of the arc-jet. Density profiles taken across the plasmoid by means of an interferometer indicate a very inhomogeneous structure. Estimates of high-frequency conductivity and collision frequency yield the values: 6×10^7 to 4×10^8 CGSE and 7×10^9 to $3 \times 10^{10} \text{ sec}^{-1}$ respectively. These results show that the jet is unstable, with large inherent loss mechanisms which decelerate the plasma and induce charge decay. This deceleration and decay are noticeably reduced in the presence of a strong external magnetic field. Oscillograph records show a sharp reduction in the longitudinal inhomogeneity observed between the tail and front layer of the jet in a 1000-oersted field. The authors express their deep gratitude to G. I. Budker and R. Z. Sagdeev, corresponding members of the AN SSSR, for their interest and help in this work." Orig. art. has: 7 figures, 3 formulas, and 1 table.

Card 2/3

L 6625-65
ACCESSION NR: AP4047369

ASSOCIATION: Institut yadernoy fiziki, Sibirskogo otdeleniya Akademii nauk SSSR
(Institute of Nuclear Physics, Siberian Branch of Academy of Sciences SSSR)

SUBMITTED: 25Mar64

SUB CODE: ME 70

NO REF SOV: 006

ENCL: 00

OTHER: 003

Card

3/3

L 17798-65 EWT(d)/EWT(1)/EWT(k)/EPA(sp)-2/SEC(k)-2/EEC-4/ETA(w)-2/EEC(t)/I/EEC(b)-2/
EWA(m)-2 Po-4/Fz-6/Pab-10/Pq-4/Pg-4/Pl-4/Pk-4/Pl-4 IJP(c)/SSD(b)/AFWL/AEDC(b)/
SSD/SSD(a)/ASD(f)-2/BSO/AS(mp)-2/ASD(a)-5/AFETR/RAEK(a)/ESD(c)/ESD(gs)/ESD(t) AT
ACCESSION NR: AF5001146 S/0294/64/002/006/0837/0841

AUTHORS: Kurtmullayev, R. Kh.; Nesterikhin, Yu. Ye.; Pil'skiy, V. I.;
Ponomarenko, A. G.

TITLE: Velocity diagnostics of plasma jets

SOURCE: Teplotfizika vysokikh temperatur, v. 2, no. 6, 1964, 837-841

TOPIC TAGS: microwave equipment, microwave plasma, plasma, interferometer,
electron collision, phase shift, reflected signal envelope / OK 15 oscillograph,
24051A cathode ray tube, 6V2P diode, OK 17 oscilloscope

ABSTRACT: A microwave ¹⁰interferometer for plasma speed diagnostics is described.
The characteristics of the interferometer are: $\lambda = 8$ mm; resolving power
 3×10^{-8} sec; maximum rate of phase change ± 6 rad/ μ sec, and sweep range $T =$
(3 to 100) μ sec. The interferometer operates by measuring the phase shift of the
probe waves and by utilizing a frequency transformation from $f_0 = 3.7 \times 10^{10}$
cycles to an intermediate $F = 30$ Mcycle frequency with a heterodyne circuit. This
is then compared with a reference frequency phase $F_0 = 30$ Mcycle on a cathode-
ray oscilloscope. The schematic of the interferometer is shown in Fig. 1 on the
Card 1/4.

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ACCESSION NR: AP5001146

$\frac{1}{2}m$

3

Enclosures. The instrument was used to measure the phase shift $\varphi(t)$

$$\varphi(t) = 2\pi \frac{t}{\lambda} \left(1 - \frac{t}{l} \int_0^l \sqrt{\epsilon(x,t)} dx \right),$$

the strength of reflected and trans-

mitted signals, and thus to determine the mean electron density N , conductivity σ , and electron collision frequency ν . The plasmoid diameter was 12λ and was generated from a conical source. The minimum value of N was $5 \times 10^{10} \text{ cm}^{-3}$, and the boundary velocity was $1.4 \times 10^6 \text{ cm/sec}$. The measurement accuracy is independent of probe signal absorption. "The authors are grateful to Yu. M. Malyavin for adjusting the apparatus and carrying out the experiments." Orig. art. has: 3 formulas and 2 figures.

ASSOCIATION: Institut yadernoy fiziki Sibirskogo otdeleniya Akademii nauk SSSR
(Institute of Nuclear Physics, Siberian Branch, Academy of Sciences SSSR)

SUBMITTED: 08Jun64

ENCL: 02

SUB CODE: ME,GP,EE

NO REF SOV: 003

ER: 003

Card 2/4

L 17798-65

ACCESSION NR: AP50011/6

ENCLOSURE: 01

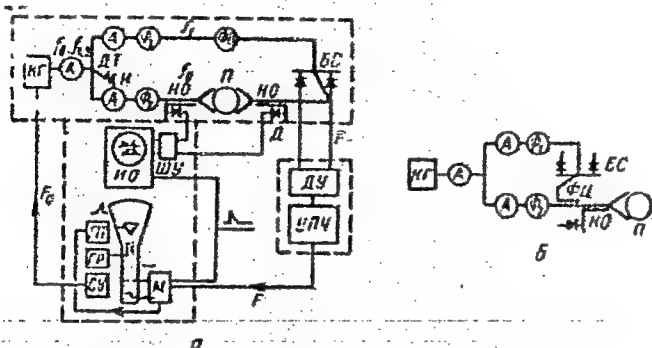


Fig. 1. Block-diagram of microwave interferometer

ДТ - double T-junction

Ф₁, Ф₂ - filters

КГ - probe signal source

U₁, U₂, H - loads

(to card 4/4)

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L 17798-65

ACCESSION NR: AP5001146

(to card 3/4)

ENCLOSURE: 02

A - attenuator
Π - plasma
BC - balanced mixer
ΔΥ - differential amplifier
ΥΠΠ - intermediate frequency amplifier
IO - pulse oscillograph
ΠΠ - two-channel amplifier
ΦΠ - ferrite circulator

Card 4/4

ACCESSION NR: AP4008944

S/0057/84/034/001/0190/0192

AUTHOR: Kurtmullayev, R.Kh.; Nesterikhin, Yu.Ye.; Ponomarenko, A.G.

TITLE: On measuring the instantaneous velocity of a plasma burst

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.1, 1964, 180-192

TOPIC TAGS: plasma, plasma burst, plasma burst velocity, plasma burst velocity measurement

ABSTRACT: A procedure is described for measuring the instantaneous velocity of plasma bursts by observing the Doppler shift of obliquely reflected microwaves. Microwave transmitting and receiving horns are located on opposite sides of the drift tube, with their axes inclined to and intersecting on the axis of the tube. In the absence of a plasma, no signal from the transmitting horn can enter the receiver. When the plasma burst reaches the critical position it reflects microwaves into the receiving horn. These are mixed with a portion of the transmitted signal and the beats are displayed on an oscilloscope screen. From these beats the Doppler shift, and hence the velocity, is obtained. This method has the advantage over some others that it responds, at any moment, to a definite section of the plasma burst

Card^{1/2}

ACC.NR: AP4009944

and thus enables one to investigate the structure of the burst. The described procedure was used to measure the velocities of plasma bursts from a conical gun, using 37 kilomegacycle microwaves with the antennas inclined 40° to the drift tube axis. The two parameters of the system (microwave frequency and antenna inclination) can be adjusted to meet a wide variety of conditions. For example, if the inclination is made very large the frequency can also be made large, with a resulting increase in space resolution. Orig.art.has; 1 formula and 3 figures.

ASSOCIATION: none

SUBMITTED: 31Aug63

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: PH

NR REF SOV: 001

OTHER: 002

Card 2/2

L 14032-65 EWT(1)/EWP(m)/EWG(k)/EPA(sp)-2/EPA(w)-2/EEC(t)/1/EEC(b)-2/EMA(m)-2
 Pz-6/Pc-4/Pd-1/Peb-10/Pi-4 IJP(c)/ASD(f)-2/SSD/SSD(b)/AEDC(b)/AEDC(a)/AFML/AFETR/
 ACCESSION NR: AP4043659 ESD(gs) AT B/0056/64/047/002/0774/0776

AUTHORS: Iskol'dskiy, A. M.; Kurtmullayev, R. Kh.; Nesterikhin,
Yu. Ye.; Ponomarenko, A. G.

TITLE: Experiments on collision-free shock waves in a plasma 21

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 8, 1964, 774-776

TOPIC TAGS: plasma shock wave, plasma magnetic measurement, shock
 front structure, shock wave propagation, plasma radiation

ABSTRACT: Preliminary results are reported on the propagation of
 shock waves in a plasma of considerably lower density ($n < 10^{14} \text{ cm}^{-3}$)
 than that used by R. Patrick (Phys. Fluids v. 3, 1960, 321), in which
 the mean free path for charge exchange is much longer than the path
 covered by the shock wave. The shock wave was produced in the plasma
 when a magnetic field was abruptly increased by discharging a ca-
 pacitor bank (magnetic piston). Measurements with the aid of an

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electron-optical converter and magnetic probes have shown that oscillations exist within the shock front, in qualitative agreement with the predictions made by R. Sagdeyev (Symposium on Electromagnetics and Fluid Dynamics of Gaseous Plasma, Polytech. Inst. of Brooklyn, 1961), V. I. Karpman (ZhTF v. 33, 959, 1963), and R. W. Morton, Finite Amplitude Compression Waves in Collision Free Plasma, Preprint NYO-10434, New York University, 1964). Additional phenomena accompanying the convergence of the shock wave to the chamber axis were also recorded, including a burst of radio emission in the 3 and 0.8 cm bands at the instant of cumulation, with a signal duration $\sim 30 \times 10^{-9}$ sec, corresponding to the time necessary for the hydromagnetic disturbance to cover a distance of the order of 1--2 cm. This correlates with the estimates obtained for the wave front with the aid of the optical and magnetic measurements. "The authors are grateful to G. I. Budker for continuous attention and interest in the work, and to R. Z. Sagdeyev and A. A. Galeev for a discussion and help." Orig. art. has: 4 figures.

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ACCESSION NR: AP4043659

ASSOCIATION: Institut yadernoy fiziki Sibirskogo otdeleniya Akademii
nauk SSSR (Institute of Nuclear Physics, Siberian Department,
AN SSSR)

SUBMITTED: 09May64

ENCL: 01

SUB CODE: ME

NO REF:SOV: 001

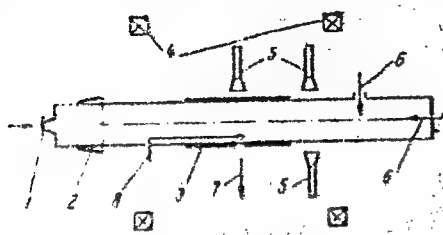
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ENCLOSURE: 01



- 1 - electrodynamic pulsed inlet of neutral gas,
- 2 - conical turn producing a pre-ionized plasma,
- 3 - shock turn of magnetic piston,
- 4 - coils producing axial magnetic field,
- 5 - microwave antenna horns
- 6 - scintillation fast-electron and x-ray pickups
- 7 - transverse slot for registration of shock wave
- 8 - magnetic micro-probe

Fig. 1. Schematic diagram of the experimental apparatus.

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L 01163-66 EMT(1)/EPF(n)-2/ENG(m). EPA(w)-2 IJP(c) AT

ACCESSION NR: AP5016651

UR/0382/65/000/002/0035/0043

533.9.082

AUTHOR: ^{44.55}Iskol'dskiy, A. M.; ^{44.55}Kurtmullayev, R. Kh.; ^{44.55}Luk'yanov, V. N.; ¹³Kesterikhin, Yu. Ye.; Ponomarenko, A. G.

^{44.55}TITLE: ^{44.55}Some properties of the ^{21,44.55}behavior of plasma heated by collisionless shocks

SOURCE: Magnitnaya gidrodinamika, no. 2, 1965, 35-43

TOPIC TAGS: plasma shock wave, shock wave heating, plasma diagnostics, microwave, plasma containment

ABSTRACT: The generation of collisionless shocks in plasma with quasistatic axial magnetic field by use of theta-pinches (powered by a storage system with maximum energy of about 3000 J) is discussed. Plasma density in the experiments was about 10^{13} cm^{-3} . Magnetic and optical measurements indicate the formation of a cylindrical "magnetic piston" driving the collisionless shocks which concentrates along the plasma axis. Also studied are the accompanying phenomena of X-ray and microwave (8 mm) noise emission. The diagnostic instrumentation (magnetic and scintillation probes and image-converter camera) is described in detail and typical results are shown (e. g. collisionless shock is shown to run ahead of the current sheet). It

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ACCESSION NR: AP5016651

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is shown in the experiments that plasma is heated during first current rise (with trapping of the magnetic field also occurring). Later, a cold plasma sheet formed at the tube walls together with the field trapped in the hot plasma leads to containment of plasma for a few microseconds. "The authors thank Academician G. I. ⁴⁴~~Budker~~ and Corresponding member AN SSSR R. Z. Sagdeyev for their continued in- ⁵⁵terest and help in interpreting the experiment." Orig. art. has: 7 figures.

ASSOCIATION: none

SUBMITTED: 12Aug64

ENCL: 00

SUB CODE: ME, EM

NO REF SOV: 004

OTHER: 004

Card 2/2

L 52353-65 EWP(m)/EPF(n)-2/EPR/EPA(w)-2/EWA(h)/EWA(c)/EWI(l)/FCS(k)/EMG(m)/EWJ(m)
 Pi-L/Pa-1/Pa-4/Pz-6/Pab-10 IJP(c) WW/AT

ACCESSION NR: AP5013374

UR/0207/65/000/002/0079/0083

AUTHORS: Kurtmullayev, R. Kh. (Novosibirsk); Malinovskiy, V. K. (Novosibirsk);
 Mesterikhin, Yu. Ya. (Novosibirsk); Ponomarenko, A. G. (Novosibirsk)

TITLE: Excitation of strong collisionless shock waves in plasma

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 2, 1965, 79-83

TOPIC TAGS: shock wave, plasma, magnetic field, electron temperature, electron density, Alfvén wave, plasma shock wave

ABSTRACT: Experimental results were obtained on collisionless shock wave excitation in a plasma. The plasma was created in a conical source by a pair of 17 μ f-10 kv capacitors. The discharge lasted 5 μ sec at 350 kamps. The plasmoid was then accelerated through a 0-2 kilo-oersted longitudinal magnetic field in a 5.2 x 200 cm glass tube. The shock wave excitation was achieved by means of a copper coil supplied by a 0.6 μ f-50 kv capacitor bank. The discharge time was 10^{-6} μ sec. The density of the plasmoid varied between 5×10^{14} to 5×10^{16} cm^{-3} . Spectrophotometric records indicated that after the excitation coil discharge the plasma is set into periodic oscillations. X-ray measurements on the

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plasmoid showed a sharp drop in x-ray output as the electron density of the plasma increased from 10^{14} to 10^{16} . These x-rays are shown to arise after the excitation of the plasma shock wave. Special collectors were used to measure the ion and electron currents, but it was not clear how the shock front was forming in the plasmoid. "The authors express their deep gratitude to G. I. Rudker for his interest and to R. Z. Sagdeyev for his valuable advice." Orig. art. has: 11 figures and 2 formulas.

ASSOCIATION: none

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NO REF SOV: 002

OTHER: 002

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